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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,847	01/16/2004	Masahiko Arai	62807-156	5086

7590 09/11/2007  
McDermott, Will & Emery  
600, 13th Street  
Washington, DC 20005-3096

EXAMINER
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YEE, DEBORAH

ART UNIT	PAPER NUMBER
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1742

MAIL DATE	DELIVERY MODE
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09/11/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/757,847

**Applicant(s)**

ARAI ET AL.

**Examiner**

Deborah Yee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3,8 and 10 to 14 is/are pending in the application.
- 4a) Of the above claim(s) 10 to 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

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### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 12, 2007 has been entered.

### ***Election/Restrictions***

2. Claims 10 to 14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on September 15, 2006.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese patent 402197550 (hereinafter JP'550) alone or in view of European patent application 0639691 (hereinafter EP'691) or Japanese patent 7-233450 (hereinafter JP'450).

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5. The English abstract of JP'550 discloses a heat resistant steel alloy having a composition with constituents whose wt% ranges overlap those recited by the claims; such overlap establishes a prima facie case of obviousness because it would be obvious for one skilled in the art to select the claimed alloy wt% ranges over the broader disclosure of the prior art since prior art teaches the same utility for making gas turbine components and similar properties, such as high temperature creep rupture strength and toughness, see MPEP 2144.05.

6. More specifically, prior art example 11 in table 1 on page 284 meets the claimed composition except for a slightly lower amount of 0.02% Mn. It would, however, be obvious to increase Mn since a broad Mn range of up to 0.05% is taught and overlaps with applicants' claimed Mn range of 0.05 to 3%. Moreover when calculated, prior art example 11 meets the claimed provisos wherein  $(\text{Ni-Co})^2 = 0.68$  and is within the recited range of not more than 1.8, and  $\text{Mo}/(\text{Mo}+0.5\text{W})=0.888$  and is within the recited range of not less than 0.75.

7. Even though JP'550 does not teach the alloying constituents Re and B as recited by claim 3, such would not be a patentable difference. Note that it is well known in the art that it is conventional practice well known in the art to add small amounts of Re and B to analogous heat resistant steel alloys to further enhance toughness and hardenability and/or add carbide and nitride stability at high temperatures, as evident by EP'691, lines 19 to 23 on page 4 and lines 5 to 11 on page 5. Since such properties would be desired and sought by JP'550, then it would be an obvious modification well

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within the skill of the artisan to incorporate small amounts of Re and/or B to the JP'550 alloy to produce no more than the known and expected from such an addition.

8. In regard to claim 8, JP'550 teaches adding up to 0.10% Cu which would be within the recited Cu range of not more than 0.5%. Even though JP'550 does not teach the additional optional elements Ti, Al, Zr, Hf, Ca, Mg, Y or rare earth elements, as recited by claim 8, such would not be a patentable difference. Note that it is well known in the art that these element are conventionally added to analogous heat resistant steel in small amounts to further enhance mechanical properties as evident by JP'450 on pages 2 and 3; and hence would be a matter of choice and routine optimization well within the skill of the artisan to incorporate to produce no more than the known and expected effect from such additions.

9. Claims 1,3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese patent 7-233450 (hereinafter JP'450) alone or in view of European patent application 0639691 (hereinafter EP'691).

10. JP'450 in claims 1 to 3 on page 2 discloses a heat resistant steel alloy having a composition with constituents whose wt% ranges overlap those recited by the claims; such overlap establishes a prima facie case of obviousness because it would be obvious for one skilled in the art to select the claimed alloy wt% ranges over the broader disclosure of the prior art since prior art teaches similar properties, such as high temperature creep rupture strength and toughness, see MPEP 2144.05.

11. More specifically, prior art example 31 in the table on pages 6 and 7 closely meets the claimed composition and when calculated, the  $(\text{Ni-Co})^2 = 0.86$  and is within

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the recited range of not more than 1.8, and  $\text{Mo}/(\text{Mo}+0.5\text{W})=0.98$  and is within the recited range of not less than 0.75.


12. Also JP'450 in claims 1 to 4 on page 2 discloses adding B, Cu, Ti, Al, Zr, Hf, Ca, Mg, Y or rare earth elements in wt% ranges that overlap those recited by claims 3 and 8. Even though JP'450 does not teach the optional alloying constituent Re as recited by claim 3, such would not be a patentable difference. Note that it is well known in the art that it is conventional practice well known in the art to add a small amounts of Re to analogous heat resistant steel alloys to further enhance toughness and hardenability, as evident by EP'691, lines 19 to 23 on page 4 and lines 5 to 11 on page 5. Since such properties would be desired and sought by JP'450, then it would be an obvious modification well within the skill of the artisan to incorporate a small amount of Re to the JP'450 alloy to produce no more than the known and expected from such an addition.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00am-2: 30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Deborah Yee  
Primary Examiner  
Art Unit 1742

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